

Remarks/Arguments

Applicants have carefully reviewed and considered the Office Action mailed on June 13, 2006, and the references cited therewith. Applicants appreciate the Examiner's review of the above-identified patent application and respectfully request reconsideration and allowance in view of the above amendments and the following remarks.

Claim Amendments

Independent claim 1 has been amended to recite, in relevant part, a pressure-sensing mat wherein a plurality of pressure-sensing elements output signals indicative of pressure applied to the top layer and a user's position in real space. Support for this amendment can be found, for example, in the Abstract of the present disclosure ("The virtual reality system includes a locomotion interface that outputs signals indicative of a user's position in real space.") Accordingly, Applicants submit that no new matter has been added. Applicants further submit that the limitations added to independent claim 1 are similar to those found in independent claims 8 and 18 and therefore should not require further search or consideration by the Examiner.

Claim Rejection - 35 U.S.C. § 102(b)

Claims 1, 2, 4, 7, 8, 10, 12, 18, and 20 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,139,261 to Openiano (hereinafter referred to as "Openiano"). Applicants respectfully traverse this rejection.

Independent claim 1 has been amended to recite, in relevant part, a pressure-sensing mat wherein a plurality of pressure-sensing elements output signals indicative of pressure applied to the top layer and a user's position in real space. Independent claims 8 and 18 also recite similar limitations. Applicants respectfully submit that Openiano does not disclose or suggest these limitations.

As best understood by Applicants, Openiano discloses a controller 1 for a video game computer 2 which may include a mat 36 (FIGS. 9 and 10) having a plurality of sensors 28 (typically four sensors 28) which may be contained in cartridges 26 that may be arbitrarily placed underneath the mat 36. See Abstract, "The signals produced by the arbitrarily located pressure or proximity sensors are received by a video game control unit." The Abstract also indicates that "[b]ecause the spatial arrangements of the various sensors, and the selection of the forces to be applied thereto, are completely arbitrary." Accordingly, the arbitrarily located sensors 28 of Openiano provide signals to the controller 1 and computer 2 (FIG. 1)

indicative of predefined motions or actions irrespective of the user's position in real space.

For example, as further shown in FIG. 1 of Openiano, four sensors may be provided which indicate "left" (L), "right" (R), "up" (U), or "down" (D). (See column 6, lines 52-64.) The position and orientation of any of these sensors may be changed with respect to each without having any impact on the signals transmitted by the sensors 28 or the resulting actions or motions that the signals indicate. Put another way, if the positions of the left sensor (L) and the right sensor (R) are swapped, the left sensor (L) will still transmit a signal representing a predefined motion or action (e.g., moving towards the left) irrespective of the fact that the user may actually move to the right to actuate this sensor. Therefore, the arbitrarily located sensors 28 do not output signals indicative of a user's position in real space, but rather provide signals to the controller 1/computer 2 indicative of predefined motions or actions irrespective of the user's position in real space.

Applicants fully understand that the Examiner has pointed to the Abstract of Openiano in support of an understanding that Openiano discloses "a locomotion interface that outputs signals indicative of a user's position in real space." Upon review of the Abstract and Openiano in general, however, Applicants are

unclear as to what the Examiner regards as "a locomotion interface that outputs signals indicative of a user's position in real space." As noted above, Applicants submit that the sensors 28 disclosed in Openiano provide signals to the controller 1 and computer 2 indicative of predefined motions or actions *irrespective of the user's position in real space*. In other words, the controller 1 disclosed by Openiano can only detect the activation of a sensor 28 and take a predefined action in response and cannot determine the user's position in real space. Should the Examiner continue to interpret that Openiano teaches or suggests "a locomotion interface that outputs signals indicative of a user's position in real space", Applicants would very much appreciate if the Examiner would specifically point out where Openiano discloses or suggests such feature.

For at least these reasons, Applicants respectfully submit that Openiano does not disclose or suggest all of the limitations recited in independent claims 1, 8, and 18. Accordingly, Applicants respectfully submits that the rejection of claims 1, 2, 4, 7, 8, 10, 12, 18, and 20 in view of Openiano is improper and should be withdrawn.

Claim Rejection - 35 U.S.C. § 103(a)

Claims 3 and 11 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Openiano in view of U.S. Patent No. 5,864,333 to O'Heir (hereinafter referred to as "O'Heir"). Claims 5, 6, 13 and 14 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Openiano. Claim 9 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Openiano in view of U.S. Patent No. 5,562,572 to Carmein (hereinafter referred to as "Carmein"). Claims 15-17 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Openiano in view of U.S. Patent No. 6,050,822 to Faughn (hereinafter referred to as "Faughn"). Applicants respectfully traverse these rejections.

For at least the reasons discussed above, Applicants respectfully submit that Openiano does not disclose or suggest all of the limitations recited in independent claims 1, 8, and 18. Accordingly, Applicants submit that the rejection of claims 5, 6, 13, and 14 should be withdrawn. Applicants further submit that O'Heir, Carmein, and Faughn do not disclose or suggest the limitations missing from Openiano for at least the reasons discussed below.

O'Heir, as best understood by Applicants, discloses a foot force actuated computer input apparatus 10 having sensors 26 that provide electrical signals proportional to the force

intensities at the toe, heel, left side, and right side of each foot pad which are converted into five different force biases. The force biases are used as thrust vectors to alter the location of a viewpoint, or torque vectors to alter the orientation of a viewpoint. (See column 2, lines 50-67.) The user's position, in real space, is substantially constant with respect to the sensors 26. Moreover, the signals transmitted by the sensors 26 do not represent the user's position in real space, but rather only the proportion of the force intensities changes. Accordingly, Applicants submit that the sensors 26 of O'Heir do not output a signal representative of a user's position in real space.

Carmein, as best understood by Applicants, discloses an omni-directional treadmill (ODT) 1, FIG. 1, having a track assembly 2 that allows a user to walk or run, a closed-loop motor control mechanism 4, a user position-sensing device 5, 6, and a balance cuff 10. The movement of the user is determined based on the velocity and direction of the motors 16, 17 used to move the track assembly 2 as well as a pair of X and Y potentiometers 18 on the support strut 12 of the balance cuff 10. Applicants respectfully submit that Carmein does not disclose or suggest a plurality of pressure-sensing elements as recited in the pending claims. As such, Carmein cannot

reasonably be said to disclose or suggest a pressure-sensitive mat comprising a plurality of pressure-sensing elements that output a signal indicative of pressure applied to the top layer and a user's position in real space.

Faughn, as best understood by Applicants, discloses an electromagnetic locomotion platform comprising a structural honeycombed subplate comprising a top plate having a very low coefficient of friction on the surface and a plurality of electromagnets placed under the top plate. For the reasons previously of record, Applicants submit that Faughn also does not disclose or suggest a plurality of pressure-sensing elements as recited in the pending claims. Accordingly, Faughn cannot reasonably be said to disclose or suggest a pressure-sensitive mat comprising a plurality of pressure-sensing elements that output a signal indicative of pressure applied to the top layer and a user's position in real space.

Accordingly, Applicants submit that none of the cited references, alone or in combination, disclose or suggest all of the limitations of independent claims 1, 8, and 18, namely, a pressure-sensing mat wherein a plurality of pressure-sensing elements output signals indicative of pressure applied to the top layer and a user's position in real space. Therefore,

Applicants respectfully submit that the rejection of the pending claims in view of these references may now be withdrawn.

Conclusion

For at least the reasons discussed above, Applicants respectfully submit that all pending claims are patentable over the references cited. The Examiner is also invited to telephone Applicants' representative (603-668-6560) listed below to facilitate advancement of the present application.

In the event that there are any fee deficiencies, or additional fees are payable, please charge, or credit any overpayment to, our Deposit Account No. 50-2121.

Respectfully submitted,

/ Steven J Grossman /

Steven J. Grossman Ph.D
Attorney for Applicants
Reg. No. 35,001
Grossman, Tucker, Perreault &
Pfleger, PLLC
55 South Commercial Street
Manchester, New Hampshire 03101
Tele: 603.668.6560